IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

UNILOC 2017 LLC, *Plaintiff,* v. GOOGLE LLC, *Defendant*.	§ § § § § § §	Case No. 2:18-CV-00492-JRG-RSP

CLAIM CONSTRUCTION
MEMORANDUM AND ORDER

On January 6, 2020, the Court held a hearing to determine the proper construction of the disputed claim terms in United States Patent Nos. 6,952,450 ("the '450 Patent"). Having reviewed the arguments made by the parties at the hearing and in their claim construction briefing (Dkt. Nos. 139, 147, & 150), having considered the intrinsic evidence, and having made subsidiary factual findings about the extrinsic evidence, the Court hereby issues this Claim Construction Memorandum and Order. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc); *see also Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015).

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I. BACKGROUND

Plaintiff Uniloc 2017 LLC ("Plaintiff" or "Uniloc") alleges that Defendant Google LLC ("Defendant" or "Google") infringes United States Patents No. 6,952,450 ("the '450 Patent").

Shortly before the start of the January 6, 2020 hearing, the Court provided the parties with preliminary constructions with the aim of focusing the parties' arguments and facilitating discussion. Those preliminary constructions are noted below within the discussion for each term.

II. APPLICABLE LAW

A. Claim Construction

This Court's claim construction analysis is guided by the Federal Circuit's decision in *Phillips v. AWH Corporation*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). In *Phillips*, the Federal Circuit reiterated that "the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Id*. at 1312. The starting point in construing such claims is their ordinary and customary meaning, which "is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id*. at 1312–13.

However, *Phillips* made clear that "the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Id*. at 1313. For this reason, the specification is often 'the single best guide to the meaning of a disputed term.'" *Id*. at 1315 (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979–81 (Fed.Cir.1995) (en banc), *aff'd*, 517 U.S. 370 (1996)) (internal quotation marks omitted). However, it is the claims, not the specification, which set forth the limits of the patentee's invention. *Id*. at 1312. Thus, "it is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the

patentee intended the claims to be so limited." *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 913 (Fed. Cir. 2004). Other asserted or unasserted claims can also aid in determining a claim's meaning. *See, e.g., Phillips*, 415 F.3d at 1314 (explaining that use of "steel baffles" and "baffles" implied that "baffles" did not inherently refer to objects made of steel).

The prosecution history also plays an important role in claim interpretation as intrinsic evidence of how the U.S. Patent and Trademark Office ("PTO") and the inventor understood the patent. *Id*. at 1317; *see also Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1361 (Fed. Cir. 2017) (applying this principle in the context of *inter partes* review proceedings); *Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1350 (Fed. Cir. 2004) (noting that "a patentee's statements during prosecution, whether relied on by the examiner or not, are relevant to claim interpretation"). However, "because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes." *Id*. at 1318, *see also Athletic Alternatives, Inc. v. Prince Mfg.*, 73 F.3d 1573, 1580 (Fed. Cir. 1996) (noting that ambiguous prosecution history may be "unhelpful as an interpretive resource").

Additionally, courts may rely on extrinsic evidence such as "expert and inventor testimony, dictionaries, and learned treatises." *Id*. at 1317. As the Supreme Court recently explained:

> In some cases . . . the district court will need to look beyond the patent's intrinsic evidence . . . to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period.

Teva Pharm. USA, Inc. v. Sandoz, Inc., 135 S. Ct. 831, 841 (2015). However, the Federal Circuit has emphasized that such extrinsic evidence is subordinate to intrinsic evidence. *Phillips*, 415 F.3d at 1317 ("[W]hile extrinsic evidence can shed useful light on the relevant art, we have explained

that it is less significant than the intrinsic record in determining the legally operative meaning of claim language." (internal quotation marks omitted)).

B. 35 U.S.C. § 112(6) (pre-AIA) / § 112(f) (AIA)[1]

A patent claim may be expressed using functional language. *See* 35 U.S.C. § 112, ¶ 6; *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1347–49 & n.3 (Fed. Cir. 2015) (en banc in relevant portion). Section 112, Paragraph 6, provides that a structure may be claimed as a "means . . . for performing a specified function" and that an act may be claimed as a "step for performing a specified function." *Masco Corp. v. United States*, 303 F.3d 1316, 1326 (Fed. Cir. 2002).

But § 112, ¶ 6 does not apply to all functional claim language. There is a rebuttable presumption that § 112, ¶ 6 applies when the claim language includes "means" or "step for" terms, and that it does not apply in the absence of those terms. *Masco Corp.*, 303 F.3d at 1326; *Williamson*, 792 F.3d at 1348. The presumption stands or falls according to whether one of ordinary skill in the art would understand the claim with the functional language, in the context of the entire specification, to denote sufficiently definite structure or acts for performing the function. *See Media Rights Techs., Inc. v. Capital One Fin. Corp.*, 800 F.3d 1366, 1372 (Fed. Cir. 2015) (stating that § 112, ¶ 6 does not apply when "the claim language, read in light of the specification, recites sufficiently definite structure" (quotation marks omitted) (citing *Williamson*, 792 F.3d at 1349; *Robert Bosch, LLC v. Snap-On Inc.*, 769 F.3d 1094, 1099 (Fed. Cir. 2014))); *Williamson*, 792 F.3d at 1349 (stating that § 112, ¶ 6 does not apply when "the words of the claim are understood by persons of ordinary skill in the art to have sufficiently definite meaning as the name for structure"); *Masco Corp.*, 303 F.3d at 1326 (stating that § 112, ¶ 6 does not apply when the

[1] Because the application resulting in the '450 Patent was filed before the effective date of the America Invents Act ("AIA"), the Court refers to the pre-AIA version of § 112.

claim includes an "act" corresponding to "how the function is performed"); *Personalized Media Communs., L.L.C. v. ITC*, 161 F.3d 696, 704 (Fed. Cir. 1998) (stating that § 112, ¶ 6 does not apply when the claim includes "sufficient structure, material, or acts within the claim itself to perform entirely the recited function . . . even if the claim uses the term 'means'") (quotation marks and citation omitted).

When it applies, § 112, ¶ 6 limits the scope of the functional term "to only the structure, materials, or acts described in the specification as corresponding to the claimed function and equivalents thereof." *Williamson*, 792 F.3d at 1347. Construing a means-plus-function limitation involves multiple steps. "The first step . . . is a determination of the function of the means-plus-function limitation." *Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc.*, 248 F.3d 1303, 1311 (Fed. Cir. 2001). "[T]he next step is to determine the corresponding structure disclosed in the specification and equivalents thereof." *Id.* A "structure disclosed in the specification is 'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." *Id.* The focus of the "corresponding structure" inquiry is not merely whether a structure is capable of performing the recited function, but rather whether the corresponding structure is "clearly linked or associated with the [recited] function." *Id.* The corresponding structure "must include all structure that actually performs the recited function." *Default Proof Credit Card Sys. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1298 (Fed. Cir. 2005). However, § 112, ¶ 6 does not permit "incorporation of structure from the written description beyond that necessary to perform the claimed function." *Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1258 (Fed. Cir. 1999).

For § 112, ¶ 6 limitations implemented by a programmed general purpose computer or microprocessor, the corresponding structure described in the patent specification must include an

algorithm for performing the function. *WMS Gaming Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999). The corresponding structure is not a general purpose computer but rather the special purpose computer programmed to perform the disclosed algorithm. *Aristocrat Techs. Austl. Pty Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008).

C. Definiteness Under 35 U.S.C. § 112, ¶ 2 (pre-AIA) / § 112(b) (AIA) [2]

Patent claims must particularly point out and distinctly claim the subject matter regarded as the invention. 35 U.S.C. § 112, ¶ 2. A claim, when viewed in light of the intrinsic evidence, must "inform those skilled in the art about the scope of the invention with reasonable certainty." *Nautilus Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 910 (2014). If it does not, the claim fails § 112, ¶ 2 and is therefore invalid as indefinite. *Id.* at 901. Whether a claim is indefinite is determined from the perspective of one of ordinary skill in the art as of the time the application for the patent was filed. *Id.* at 908. As it is a challenge to the validity of a patent, the failure of any claim in suit to comply with § 112 must be shown by clear and convincing evidence. *Id.* at 912 n.10. "[I]ndefiniteness is a question of law and in effect part of claim construction." *ePlus, Inc. v. Lawson Software, Inc.*, 700 F.3d 509, 517 (Fed. Cir. 2012).

When a term of degree is used in a claim, "the court must determine whether the patent provides some standard for measuring that degree." *Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d 1374, 1378 (Fed. Cir. 2015) (quotation marks omitted). Likewise, when a subjective term is used in a claim, "the court must determine whether the patent's specification supplies some standard for measuring the scope of the [term]." *Datamize, LLC v. Plumtree Software, Inc.*, 417

[2] Because the application resulting in the '450 Patent was filed before the effective date of the America Invents Act ("AIA"), the Court refers to the pre-AIA version of § 112.

F.3d 1342, 1351 (Fed. Cir. 2005); *accord Interval Licensing LLC v. AOL, Inc*., 766 F.3d 1364, 1371 (Fed. Cir. 2014) (citing *Datamize*, 417 F.3d at 1351).

III. THE PARTIES' STIPULATED TERMS

The parties agreed to the constructions of the following terms/phrases in their December 24, 2019 P.R. 4-5(d) Joint Claim Construction Chart.

Claim Term/Phrase	**Agreed Construction**
"extracting" (Claims 1–3, 22–24) "extractor" (Claim 21)	Plain and ordinary meaning
"motion vectors" (Claims 1, 2, 21–24) "vector[s]" (Claims 3, 4, 8, 9, 12, 13, 16–20, 23, 24)	"horizontal and vertical components which show the magnitude and direction of motion for an object from one frame to a predicted or bidirectional frame"
"based on" (Claims 1–4, 8, 9, 12, 13, 16–24)	Plain and ordinary meaning
"a total energy (or variance) data element" (Claims 8, 12, 16)	"data element that can be used to show the net total of the data elements present in the entire frame field"
"a mean or variance data element" (Claims 8, 12, 16)	"data element that can be used to measure the total or directional motion of a particular object"
"a global direction measure data element" (Claims 8, 12, 16)	"data element that can be used to indicate a panning of the camera"
"assigning an importance to the [extracted] motion vectors" (Claims 2, 3, 23) "assigning an importance to each vector" (Claim 4)	Plain and ordinary meaning

(Dkt. No. 152-1 at 1–2).[3] In view of the parties' agreement on the proper construction of the identified terms, the Court hereby **ADOPTS** the parties' agreed constructions.

IV. CONSTRUCTION OF DISPUTED TERMS IN THE '450 PATENT

The '450 Patent, titled "Unequal Error Protection of Video Based on Motion Vector Characteristics," issued on October 4, 2005, and bears an earliest priority date of February 15, 2002. Plaintiff submits: "The '450 patent teaches novel ways of protecting the transmission of streaming data (e.g., a multimedia stream or a video stream)." Dkt. No. 139 at 6. The Abstract of the '450 Patent states:

> In a first embodiment according to the present invention, a method for data transmission is provided. A multimedia stream is received through an electronic medium. Within the stream are a plurality of vectors. Based on the vectors, a plurality of error protection units are added to the multimedia stream.

A. "importance"

Disputed Term	Plaintiff's Proposal	Defendant's Proposal
"importance" (Claims 2, 3, 21, 23, and 24)	"a grouping based on criteria shared in common" (not indefinite)	Indefinite OR "understood comparative value of a motion vector describing the ability to reconstruct an image without unintentional distortion"

Shortly before the start of the January 6, 2020 hearing, the Court preliminary construed the term "[an/the] importance" to mean "whether a motion vector is likely to be lost during transmission."

[3] Citations to the parties' filings are to the filing's number in the docket (Dkt. No.) and pin cites are to the page numbers assigned through ECF rather than the page numbers assigned within the original document unless otherwise noted.

1. The Parties' Positions

The parties dispute whether the term "importance" is indefinite. In the alternative, the parties dispute the proper meaning of the term "importance." Plaintiff argues that the word "importance" is used as "a label to collectively group together certain motion vectors based on criteria (reflecting importance) that they all have in common (e.g., which group is predicted to most likely be lost)." Dkt. No. 139 at 7 (citing '450 Patent at 2:65–3:41).

Plaintiff argues that Defendant's construction would exclude the preferred embodiment because it adds the requirement that each motion vector must be assigned a respective "comparative value." *Id*. at 8. Plaintiff contends that the preferred embodiment groups together certain motion vectors by collectively labeling them as "important" based on criteria they all have in common, without requiring any sort of quantified "comparative value." *Id*. Plaintiff also contends that Defendant's construction would require the jury to guess as to whether the requirement of "describing the ability to reconstruct an image without unintentional distortion" pertains to the "motion vector" or to the extraneous element "understood comparative value." *Id*. Finally, Plaintiff argues that Defendant's construction adds restrictions to the "motion vector" term that are extraneous to the parties' agreed construction for that term. *Id*. at 8–9.

Defendant responds that the term "importance" has no particular meaning within the field of video encoding to a person of ordinary skill in the art. Dkt. No. 147 at 8 (citing Dkt. No. 147-1 at ¶ 60). Defendant argues that the claim language does not explain why or how "importance" relates to partitioning the video stream or adding error protection and therefore does not provide reasonable certainty of the scope of "importance." *Id*. at 8–9. Defendant further argues that the specification also fails to provide reasonable certainty regarding the scope of "importance." *Id*. at 9) (citing '450 Patent at 3:8–13, 3:35–41; Dkt. No. 147-1 at ¶¶ 61–64). Defendant contends that the "two portions of the specification provide at most a single example of what may factor into

assigning importance." *Id*. at 9. According to Defendant, the asserted claims containing the term "importance" are invalid for indefiniteness because the specification fails to inform persons of skill in the art about the scope of "importance" with reasonable certainty. *Id*. at 10.

In the alternative, Defendant argues that the asserted claims describe "importance" as the basis for differential treatment of the motion vectors.[4] *Id*. Defendant contends that "importance" must have some sort of value allowing and/or reflecting a comparison between multiple motion vectors. *Id*. (citing '450 Patent at 6:23–34). Defendant also argues that the specification implies that some motion vectors are more likely to be lost than others, which necessitates a comparison of the motion vectors. *Id*. Defendant further argues that "importance" must relate to the ability to reconstruct an image without unintentional distortion. *Id*. at 11 (citing '450 Patent at 1:54–57, 3:26–36, 3:44–48). According to Defendant, "importance" is a proxy for whether unintentional errors in transmitting a motion vector would prevent reconstruction of an undistorted video. *Id*. at 11–12 (citing '450 Patent at 3:10–12).

Regarding Plaintiff's construction, Defendant argues that "importance" cannot be a "grouping" because the asserted claims state that an importance is assigned to each of the motion vectors individually, not as a group. *Id*. at 12 (citing '450 Patent at 6:33–34, 1:35–36). Defendant also argues that the term "criteria" does not appear in the specification and that Plaintiff incorrectly argues that "importance" can be based on any sort of criteria. *Id*. Defendant contends that basing "importance" on any sort of criteria does not inform a person of ordinary skill in the art with reasonable certainty about the invention's scope. *Id*. at 12–13 (citing Dkt. No. 147-1 at ¶ 65).

Plaintiff replies that Defendant fails to explain how assigning the same importance label to

[4] During the January 6, 2020 hearing, Defendant agreed that the Court's preliminary construction was appropriate if the Court determined that the '450 Patent defines the scope of "importance" with reasonable certainty.

plural "vectors" does not support construing "importance" to mean a "grouping based on criteria shared in common." Dkt. No. 150 at 6. Plaintiff contends that the respective "importance" limitations of independent claims 2, 3, and 21 are all distinguishable on their face from dependent claim 4, which recites "assigning an importance to each vector" in the singular. *Id*. Plaintiff also argues that the claim language indicates that there is a meaningful distinction between extracting intrinsic values of motion vectors and then assigning an importance to motion vectors sometime after they are extracted. *Id*. at 7 (citing '450 Patent at 5:5–6). Finally, Plaintiff contends that Defendant's construction injects ambiguity by using an extraneous word that has multiple different meanings. *Id*. at 8.

2. Analysis

The term "importance" appears in asserted claims 2, 3, 21, 23, and 24 of the '450 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same general meaning in each claim. The Court further finds that the term "importance," when read in light of the specification delineating the patent and the prosecution history, informs, with reasonable certainty, those skilled in the art about the scope of the invention. *Nautilus Inc. v. Biosig Instruments, Inc*., 572 U.S. at 901.

The claim language recites that the term "importance" is assigned to the motion vectors. For example, claim 2 recites "assigning *an importance* to the motion vectors; based on *the importance*, partitioning the video stream into a plurality of data types; based on *the importance*, adding a plurality of error protection units to the partitioned video stream." The specification further discloses that the term "importance" indicates whether a motion vector is likely to be lost during transmission. Specifically, the specification states the following:

> The motion vectors are then analyzed in an analysis software tool 120. Preferably, certain frames or portions of certain frames that comprise the video stream are

> labeled "important." For example, predictions about *which portions of certain frames (e.g., motion vectors) are most likely to be lost are made*. Such portions can then be labeled "important."

'450 Patent at 3:6–13 (emphasis added). The specification also states that this assignment eliminates wasted bandwidth and reduces overhead, because error protection is not applied "on portions or types of video that are not important." *Id*. at 3:28–30; *see also id*. at 1:65–2:3 ("[Prior art] error protection methods ignore the data actually contained in the data streams. This results in increased overhead for coding non-important portions of the video streams.").

The specification also discloses that when the motion vectors are identified as "important" they can "get more protection in the form of better error-correcting codes *(e.g.*, Reed-Solomon codes), or portions of that data could be repeated elsewhere in the video stream (redundancy)." *Id*. at 3:36–41. Accordingly, the Court finds that the term "[an/the] importance" means "whether a motion vector is likely to be lost during transmission."

Defendant contends that the intrinsic evidence does not provide reasonable certainty of the scope of "importance." Dkt. No. 147 at 8–9. Defendant argues that the specification provides "at most a single example of what may factor into assigning importance." *Id*. at 9–10 (citing '450 Patent at 3:8–13). According to Defendant, this example provides no boundaries around what might factor into assigning "importance." *Id*. at 9. For the reasons stated above, the Court finds that the intrinsic evidence provides reasonable certainty of the scope of the term "[an/the] importance." Accordingly, the Court finds that Defendant has failed to prove by clear and convincing evidence that the phrase is indefinite.

In the alternative, Defendant argues that the term "importance" should be construed to mean "understood comparative value of a motion vector describing the ability to reconstruct an image without unintentional distortion." *Id*. at 10. According to Defendant, "[t]his construction can be best understood by splitting it into two components: (1) understood comparative value, and

(2) describing the ability to reconstruct an image without unintentional distortion." *Id*.

Regarding the first component of "understood comparative value," the Court rejects Defendant's construction because it introduces the unwarranted requirement that each motion vector must be assigned a respective "comparative value." Contrary to Defendant's contention, the intrinsic evidence does not require a quantified "comparative value" for individually distinguishing one motion vector from another. Instead, one or more motion vectors may be labeled "important" based on whether that motion vector is likely to be lost during transmission. Moreover, the words "understood comparative value" do not appear in the specification and would only confuse the issue.

Regarding the second component of "describing the ability to reconstruct an image without unintentional distortion," the Court rejects Defendant's construction because it also introduces an unwarranted requirement. The specification does not describe "importance" as an indicator that must "describ[e] the ability to reconstruct an image without unintentional distortion." Indeed, none of the words in Defendant's construction appear in the intrinsic evidence. Moreover, this phrase would confuse the jury because it is unclear and subjective. As discussed above, the intrinsic evidence indicates that one or more motion vectors may be labeled "important" based on whether that motion vector is likely to be lost during transmission. Finally, Defendant agreed at the January 6, 2020 hearing that the Court's construction was appropriate, if the Court determined that the '450 Patent defines the scope of "importance" with reasonable certainty. Accordingly, the Court rejects Defendant's alternative construction.

Turning to Plaintiff's construction, the Court rejects it because it would redraft "important" as simply a grouping based on an unspecified criteria. As discussed above, the specification indicates that the criteria is whether the vectors are most likely to be lost during transmission. This

is the definition of "important" chosen by the patentee as it applies to the recited motion vectors. *See* '450 Patent at 3:6–13. Moreover, it is the only embodiment disclosed that informs, with reasonable certainty, a person of ordinary skill in the art about the scope of the term "important." Indeed, Plaintiff's construction is so broad that it could include "unimportant" motion vectors because they also would be "a grouping based on criteria shared in common." Accordingly, the Court rejects Plaintiff's construction because it is inconsistent with the intrinsic evidence. Finally, in reaching its conclusion, the Court has considered the extrinsic evidence submitted by the parties and given it its proper weight in light of the intrinsic evidence.

3. Court's Construction

For the reasons set forth above, the Court construes the term **"[an/the] importance"** to mean **"whether a motion vector is likely to be lost during transmission."**

B. "analyzing the one or more extracted motion vectors"

Disputed Term	**Plaintiff's Proposal**	**Defendant's Proposal**
"analyzing the one or more extracted motion vectors" (Claims 1 and 22)	Given the parties have reached agreement concerning the "extracting" and "motion vectors" terms, no construction is required for the phrase "analyzing the one or more extracted motion vectors".	"determining a comparative value of a motion vector from the multimedia stream"

Shortly before the start of the January 6, 2020 hearing, the Court provided the parties with the following preliminary construction for this term: Plain and ordinary meaning.

1. The Parties' Positions

The parties dispute whether the phrase "analyzing the one or more extracted motion vectors" requires construction. Plaintiff argues that no construction is required for this phrase because the parties have reached agreement concerning the terms "extracting" and "motion

vectors." Dkt. No. 139 at 9. Plaintiff also argues that Defendant attempts "to imbue the 'analyzing' term recited in claims 1 and 22 with the same erroneous 'comparative value' construction Google seeks for the distinct 'importance' term recited in other claims." *Id*. at 10. Plaintiff further argues that the word "importance" does not appear in claims 1 and 22 and that Defendant's construction improperly imports into these claims its incorrect construction for the term "importance." *Id*.

Defendant responds that the disputed phrase relates to the "importance" term discussed above because the asserted claims require partitioning the multimedia stream and adding error protection to the multimedia stream based on the analysis of the motion vectors. Dkt. No. 147 at 13 (citing '450 Patent at 4:62–67, 6:33–34, 6:50–55). Defendant also argues that the specification further links the "analyzing" term with "importance" by describing the latter as being assigned as a result of the former. *Id*. at 13–14 (citing '450 Patent at 3:7–48). Defendant contends that the analysis must determine some sort of value applicable to each individual motion to allow for comparative differentiation across the motion vectors. *Id*. at 13.

Defendant further argues that its construction does not make the meaning of different claims the same because it has not proposed the same construction for the two terms. *Id*. at 14. According to Defendant, one requires determining a comparative value and the other requires assigning a comparative value. *Id*. Defendant argues that proving infringement of claims 1 and 2 requires a different analysis for each. *Id*.

Plaintiff replies that the omission of the term "importance" from claims 1 and 22 was intentional. Dkt. No. 150 at 8. Plaintiff argues that claims 1 and 22 do not recite a "link" between analyzing motion vectors and assigning importance. *Id*. Plaintiff further argues that dependent claim 4 does not express any requirement concerning a "link" between the "analyzing" and the "assigning" steps. *Id*.

2. Analysis

The phrase "analyzing the one or more extracted motion vectors" appears in asserted claims 1 and 22 of the '450 Patent. The Court finds that the phrase is used consistently in the claims and is intended to have the same general meaning in each claim. The Court also finds that the phrase does not require construction. As indicated above, the parties agree to the construction for the terms "extracting" and "motion vectors," and Defendant's construction does not provide further clarity beyond the agreed constructions. Defendant's construction instead introduces ambiguity into the claims by including the "comparative value" component from its proposed construction of the term "importance." As discussed above, the Court rejects this language because it introduces an unwarranted requirement into the claims. Furthermore, the words "comparative value" do not appear in the specification.

More importantly, claims 1 and 22 do not recite the disputed term "importance." Thus, even if Defendant's construction of "importance" was adopted, it would be improper to read it into these claims. *Samsung Elecs. Co. v. Elm 3DS Innovations, LLC*, 925 F.3d 1373, 1379 (Fed. Cir. 2019) ("[D]ifferent words used in different claims result in a difference in meaning and scope for each of the claims.") (quoting *Clearstream Wastewater Systems, Inc. v. Hydro-Action, Inc.*, 206 F.3d 1440, 1446 (Fed. Cir. 2000)). Accordingly, the disputed phrase will be given its plain and ordinary meaning based on the agreed constructions of the terms "extracting" and "motion vectors."

Defendant argues that the specification "links the 'analyzing' term with 'importance' by describing the latter as being assigned as a result of the former." Dkt. No. 147 at 13 (citing '450 Patent at 3:7–10). The Court disagrees. The portion of the specification cited by Defendant defines the term "important," and not the term "analyzing." Defendant further argues that the specification

states that "[e]rror protection is added to the video stream based on the results obtained by the analysis software tool 120." Dkt. No. 147 at 13 (citing '450 Patent at 3:24–48). This argument is unpersuasive because claims 1 and 22 recite adding error protection based on the analysis of the extracted motion vectors later in the claims. The plain language of the claim does not require reading an "importance" limitation into claims 1 and 22.

Defendant also argues that it does not propose the same meaning for different claims because one claim requires "determining a comparative value" and the other would require "assigning a comparative value." Notwithstanding the difference between "determining" and "assigning," Defendant fails to provide a persuasive argument for redrafting the single word "analyzing" as "determining a comparative value." Accordingly, the Court rejects Defendant's construction.

3. Court's Construction

For the reasons set forth above, the phrase **"analyzing the one or more extracted motion vectors"** will be given its **plain and ordinary meaning.**

C. "error protection units" and "error protection"

Disputed Term	**Plaintiff's Proposal**	**Defendant's Proposal**
"error protection units" (Claims 1–5, 10, 13, 14, 17) "error protection" (Claim 21)	No construction required because these terms mean precisely what they say (e.g., "error protection units" are units that protect against error).	"supplemental bits of information added to preexisting data to compensate for unintended transmission errors."

Shortly before the start of the January 6, 2020 hearing, the Court provided the parties with the following preliminary construction for these terms: "codes that make transmission over a network more robust."

1. The Parties' Positions

The parties dispute whether the terms "error protection units" and "error protection" require construction. Plaintiff argues that the terms do not require construction because they mean precisely what they say (e.g., "error protection units" are units that protect against error). Dkt. No. 139 at 10. Plaintiff further argues that Defendant's construction violates canons of claim construction and would be unhelpful to a jury. *Id*. Plaintiff contends that Defendant does not offer a definition for "error protection units" that would clarify its meaning, but instead offers an interpretation as to how the recited "error protection units" allegedly must be used. *Id*. at 11.

Plaintiff also argues that the elements "supplemental bits of information" and "preexisting data" are not expressed anywhere in the specification. *Id*. at 12. Plaintiff further contends that the jury would have to guess as to the meaning of the qualifier "preexisting" and how the unspecified "data" might itself be "preexisting." *Id*. Plaintiff argues that Defendant's construction also unnecessarily injects ambiguity by its inclusion of the extraneous requirement "determined to be important to compensate for unintended transmission errors." *Id*. Finally, Plaintiff argues that Defendant fails to give meaningful effect to the word "units" (in the plural) in proposing that "a plurality of error protection units" and "error protection" (without reciting "units") have the same meaning and scope. *Id*.

Defendant responds that the asserted claims require adding error protection to a multimedia stream based on the analysis of the motion vectors extracted from that multimedia stream and based on the importance assigned to those motion vectors. Dkt. No. 147 at 14 ('450 Patent at 4:65–67, 5:10–11). Defendant argues that its construction encompasses the idea of adding something to a bit stream by requiring "supplemental bits of information [i.e., the error protection] added to preexisting data [i.e., the original multimedia bitstream]." *Id*. at 14–15. Defendant further argues that the specification gives two examples of error protection added to a multimedia stream. *Id*. at

15 (citing ’450 Patent at 3:35–41). According to Defendant, both of these forms of error protection require the transmission of additional bits of information. *Id*. (citing Dkt. No. 147-7 at 2; ’450 Patent at 3:39–41).

Defendant also argues that the specification makes clear that “error protection [units]” are applied to compensate for unintended transmission errors. *Id*. (citing ’450 Patent at 1:24–41, 3:8–13). Defendant contends that more error protection is applied to regions where such errors are more likely to have a deleterious effect, with less error protection applied to regions where the errors can be concealed. *Id*. at 16 (citing ’450 Patent at 1:30–32). According to Defendant, the correct construction of “error protection [units]” therefore encompasses compensating for unintended transmission errors. *Id*.

Plaintiff replies that none of the portions of the specification Defendant cites unambiguously require the additional limitations Defendant seeks to add through its claim construction. Dkt. No. 150 at 9. Plaintiff argues that Defendant acknowledges its citations to the specification are directed to disclosed “examples” which use qualifying “may” and “could be” language. *Id*. Plaintiff contends that adding these limitations is impermissible. *Id*.

2. Analysis

The term “error protection units” appears in asserted claims 1–5, 10, 13, 14, 17, and 22–24 of the ’450 Patent. The term “error protection” appears in asserted claim 21 of the ’450 Patent. The Court finds that the terms are used consistently in the claims and are intended to have the same general meaning in each claim. The Court further finds that the terms should be construed to mean “codes that make transmission over a network more robust.”

Each independent claims recites that “error protection units” and “error protection” are added to the video stream. The specification further indicates that the error protection includes

codes that make transmission over a network more robust. For example, the specification states "*[t]o make the bitstream more robust for transmission over networks*, error protection is added to different parts of the video stream." '450 Patent at 1:32–34 (emphasis added), *see also id*. at 1:54–57 ("*To make the compressed video stream more robust to errors that arise during transmission*, several error correction tools to enable detection, containment, and concealment of errors are used.") (emphasis added).

Likewise, the specification states that "[e]rror correcting codes, such as Reed-Solomon Erasure codes or feedback-based protection schemes (e.g., Type I or II hybrid ARQ) can also be added to the video portions *to improve robustness*." *Id*. at 1:62–65; *see also id*. at 3:36–41 ("For example, packets or MPEG video headers in 'important' regions could get more protection in the form of better error-correcting codes (e.g., Reed-Solomon codes), or portions of that data could be repeated elsewhere in the video stream (redundancy)."); 4:41–45 ("Error protection can then be implemented by adding error detection or correction codes to the data (e.g., the motion vectors, headers, and texture data) based on the set of motion vectors."). Accordingly, the intrinsic evidence indicates that "error protection units" and "error protection" should be construed to mean "codes that make transmission over a network more robust."

Defendant argues that "[a] multimedia stream consists of a sequence of binary data (i.e., ones and zeros), otherwise known as a 'bitstream,' which can be transmitted over a network." Dkt. No. 147 at 14 (citing '450 Patent at 1:19–23). Defendant contends that adding something to a bitstream requires the inclusion of additional ones and zeros (i.e., "bits"). *Id*. The Court agrees that the specification indicates that something is added to the stream. However, the specification states that it is "codes" that are added and not "supplemental bits of information."

Regarding Defendant's language of "added to preexisting data," the surrounding claim

language itself recites that the "error protection units" and "error protection" is added to the stream. Thus, Defendant's proposed language is redundant and unnecessary. Accordingly, the Court rejects Defendant's construction of "supplemental bits of information added to preexisting data" and adopts the language chosen by the patentee. Indeed, Defendant agreed with this aspect of the Court's construction at the January 6, 2020 hearing.

Regarding Defendant's "compensate for unintended transmission errors" language, Defendant cites to the portion of the specification that states error protection is added to the video stream "[t]o make the bitstream more robust for transmission over networks." Dkt. No. 147 at 15 (citing '450 Patent at 1:32–34). The portion of the specification cited by Defendant is the language adopted by the Court. Accordingly, the Court adopts this language because it is the language chosen by the patentee, not a reinterpretation of this language. Finally, in reaching its conclusion, the Court has considered the extrinsic evidence submitted by the parties and given it its proper weight in light of the intrinsic evidence.

3. Court's Construction

For the reasons set forth above, the Court construes the terms **"error protection units"** and **"error protection"** to mean **"codes that make transmission over a network more robust."**

D. "similar vectors"

Disputed Term	**Plaintiff's Proposal**	**Defendant's Proposal**
"selecting a plurality [of] similar vectors from the vectors based on a direction and adding the error protection units based on the similar vectors" (Claims 9, 13, 17)	No construction required; not indefinite.	Indefinite as to the term "similar" OR Plain and ordinary meaning

Shortly before the start of the January 6, 2020 hearing, the Court preliminarily construed the term "similar vectors" to mean "vectors that point in the same direction with the same magnitude."

1. The Parties' Positions

The parties dispute whether the term "similar" is indefinite. In the alternative, Defendant contends that the term should be given its plain and ordinary meaning. Plaintiff argues that because Defendant has argued for plain and ordinary meaning in the alternative, Defendant concedes that the word "similar" is sufficiently definite in its recited context. Dkt. No. 139 at 18. Plaintiff also argues that the surrounding context in which this term is recited provides sufficient definiteness by clarifying that the selecting of similar vectors is "based on a direction . . . ." *Id*. at 19. Plaintiff contends that the specification also provides guidance by expressly referring to the "similar" term in quotes. *Id*. (citing '450 Patent at 4:37–45).

Defendant responds that the term "similar" has no particular meaning in relation to motion vectors to a person of ordinary skill in the art within the field of video encoding. Dkt. No. 147 at 17 (citing Dkt. No. 147-1 at ¶ 66). Defendant further argues that the term "similar" is a word of degree, so the specification must provide "some standard for measuring that degree" to avoid indefiniteness. *Id*. (citing *Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d at 1378). Defendant contends that the intrinsic evidence fails to define the scope of the term "similar" with reasonable certainty. *Id*.

Defendant argues that a vector is an object with a magnitude and a direction. *Id*. (citing Dkt. No. 147-1 at ¶ 68). Defendant further argues that the asserted claims require selecting "similar" motion vectors "based on a direction" but leaves multiple questions unanswered. *Id*. Defendant contends that the claim does not explain whether a closer relationship in magnitude between two motion vectors could allow for a greater variance in direction while still being

considered "similar" and vice versa. *Id*. at 18. Defendant argues that the specification does not resolve these issues. *Id*. (citing '450 Patent at 4:37–42; Dkt. No. 147-1 at ¶ 68).

Plaintiff replies that Defendant fails to prove its indefiniteness theory by clear and convincing evidence. Dkt. No. 150 at 11. Plaintiff argues that Defendant quotes a portion of the specification that Defendant acknowledges is directed to the "similar" term, which sufficiently describes what is deemed similar. *Id*.

2. Analysis

The term "similar vectors" appears in asserted claims 9, 13, and 17 of the '450 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same general meaning in each claim. The Court further finds that the term "similar vector," when read in light of the specification delineating the patent and the prosecution history, informs, with reasonable certainty, those skilled in the art about the scope of the invention. *Nautilus Inc. v. Biosig Instruments, Inc*., 572 U.S. at 901.

The claim language indicates that "similar vectors" are selected based on a direction. For example, claim 2 recites "assigning an importance to the motion vectors; based on the importance, partitioning the video stream into a plurality of data types; [and] based on the importance, adding a plurality of error protection units to the partitioned video stream . . . ." Claim 13, which depends from claim 2, further recites "selecting a plurality of similar vectors from the vectors based on a direction and adding the error protection units based on the similar vectors." Thus, the claim language indicates that error protection is added to the selected plurality of similar vectors.

The specification further discloses that the term "similar" is used to describe what vectors are selected. Specifically, the specification states the following:

> Certain regions which have "similar" motion vectors, for example, an object or point of interest, can be identified in the frame by identifying motion vectors that

> are similar. *For example, a frame may contain a set of motion vectors that all point 45 degrees up with the same magnitude*, which are representative of an object moving in that direction. Error protection can then be implemented by adding error detection or correction codes to the data (e.g., the motion vectors, 45 headers, and texture data) based on the set of motion vectors.

'450 Patent at 4:37–45 (emphasis added). Accordingly, the Court finds that the term "similar vector" should be construed to mean "vectors that point in the same direction with the same magnitude."

During the January 6, 2020 hearing, Plaintiff argued that claim 9 only requires "selecting a plurality similar vectors from the vectors based on a direction," and thus, the construction should not require the "similar vectors" to have the same magnitude. The Court disagrees. Claim 9 depends from claim 1. Claim 1 recites the step of "extracting one or more vectors from the multimedia stream." Because the claim uses the open-ended transition phrase "comprising," the extracted vectors may include one or more groups of a plurality of similar vectors. In other words, there can be a number of different groups of "similar" vectors extracted in this step (e.g., one group that points 45 degree up, one group that point 90 degree up, one group that points 30 degrees down, etc). Claim 9 requires that a plurality of similar vectors (i.e., a group of similar vectors) are then selected based on a direction. For example, "a set of motion vectors that all point 45 degrees up with the same magnitude." '450 Patent at 4:39–41. Accordingly, the Court rejects Plaintiff's argument that the construction should not require the similar vectors to have the same magnitude. Finally, in reaching its conclusion, the Court has considered the extrinsic evidence submitted by the parties and given it its proper weight in light of the intrinsic evidence.

3. Court's Construction

For the reasons set forth above, the Court construes the term **"similar vectors"** to mean **"vectors that point in the same direction with the same magnitude."**

E. Computer-Readable Medium Claims 22–24

Disputed Term	Plaintiff's Proposal	Defendant's Proposal
"A computer readable medium having stored thereon, computer executable process steps operative to control computer to document source files the steps comprising: . . . extracting one or more motion vectors from the [multimedia stream / video stream]" (Claims 22–24)	Not governed by 35 U.S.C. § 112(6); not indefinite; no construction necessary	Governed by 35 U.S.C. § 112(6) Indefinite due to absence of corresponding structure (algorithm) in the specification under 35 U.S.C. § 112(2), 112(6). **Function:** extracting one or more motion vectors from a video stream **Structure/Algorithm:** None
"A computer readable medium having stored thereon, computer executable process steps operative to control computer to document source files the steps comprising: . . . assigning an importance to the motion vectors" (Claim 23)	Not governed by 35 U.S.C. § 112(6); not indefinite; no construction necessary	Governed by 35 U.S.C. § 112(6) Indefinite due to absence of corresponding structure (algorithm) in the specification under 35 U.S.C. § 112(2), 112(6). **Function:** assigning an importance to the motion vectors **Structure/Algorithm:** None
"A computer readable medium having stored thereon, computer executable process steps operative to control computer to document source files the steps comprising: . . . partitioning the multimedia stream into a plurality of data types based at least in part on the analysis of the extracted motion vectors." (Claim 22)	Not governed by 35 U.S.C. § 112(6); not indefinite; no construction necessary	Governed by 35 U.S.C. § 112(6) Indefinite due to absence of corresponding structure (algorithm) in the specification under 35 U.S.C. § 112(2), 112(6). **Function:** "partitioning the multimedia stream into a plurality of data types based on an assigned importance to the extracted motion vectors" **Structure/Algorithm:** None

Disputed Term	**Plaintiff's Proposal**	**Defendant's Proposal**
"A computer readable medium having stored thereon, computer executable process steps operative to control computer to document source files the steps comprising: . . . based on the importance, partitioning the video stream [into a plurality of data types]" (Claims 23, 24)	Not governed by 35 U.S.C. § 112(6); not indefinite; no construction necessary	Governed by 35 U.S.C. § 112(6) Indefinite due to absence of corresponding structure (algorithm) in the specification under 35 U.S.C. § 112(2), 112(6). **Function:** "based on the importance, partitioning the video stream into a plurality of data types" **Structure/Algorithm:** None
"A computer readable medium having stored thereon, computer executable process steps operative to control computer to document source files the steps comprising: . . . adding a plurality of error protection units to the multimedia stream based on the analysis of the extracted motion vectors" (Claim 22)	Not governed by 35 U.S.C. § 112(6); not indefinite; no construction necessary	Governed by 35 U.S.C. § 112(6) Indefinite due to absence of corresponding structure (algorithm) in the specification under 35 U.S.C. § 112(2), 112(6). **Function:** "adding a plurality of error protection units to a multimedia stream based on an assigned importance to the extracted motion vectors" **Structure/Algorithm:** None
"A computer readable medium having stored thereon, computer executable process steps operative to control computer to document source files the steps comprising: . . . based on the importance, adding a plurality of error protection units to the [partitioned] video stream" (Claim 23, 24)	Not governed by 35 U.S.C. § 112(6); not indefinite; no construction necessary	Governed by 35 U.S.C. § 112(6) Indefinite due to absence of corresponding structure (algorithm) in the specification under 35 U.S.C. § 112(2), 112(6). **Function:** "based on the importance, adding a plurality of error protection units to the partitioned video stream" **Structure/Algorithm:** None

Shortly before the start of the January 6, 2020 hearing, the Court provided the parties with the following preliminary constructions for these phrases: Not governed by 35 U.S.C. § 112, ¶ 6, Plain and ordinary meaning.

1. The Parties' Positions

The parties dispute whether the computer-readable medium claims should be governed by 35 U.S.C. § 112, ¶ 6. Plaintiff argues that there is a presumption that Section 112(6) does not apply to any of these disputed terms. Dkt. No. 139 at 12–13. Plaintiff contends that this Court has held that "the term 'computer-readable medium' was well understood to one of ordinary skill in the art at the time of the invention." *Id*. at 13 (citing *Convolve, Inc. v. Dell, Inc*., No. 2:08-CV-244-CE, 2011 WL 31792, at *19 (E.D. Tex. Jan. 5, 2011)). Plaintiff argues that the phrase "computer readable medium" is widely recognized as having a structural meaning that is patentably distinct from the phrase "means for." *Id*. at 14. Plaintiff further contends that the phrase "computer-readable medium" is introduced in the respective claim preamble (of claims 22–24) and defined by the structural requirements of ". . . having stored thereon, computer executable process steps operative to control computer to document source files, the steps comprising: . . . ." *Id*.

Plaintiff also argues that the phrase "[a] computer readable medium" is recited only in certain claim preambles. *Id*. Plaintiff contends that there is no requirement that a claim preamble recite a known structural element. *Id*. Plaintiff argues that the body of the claim may define the structural elements introduced in a claim preamble. *Id*. at 15. Plaintiff further contends that none of the claim limitations Defendant identifies for construction make express reference back to anything recited in the preamble. *Id*.

Defendant responds that the phrase "computer-readable medium" does not indicate any structure because computers at the time of the alleged invention were capable of reading almost any form of medium. Dkt. No. 147 at 22 (citing Dkt. No. 147-1 at ¶ 27). Defendant contends that the meaning of the computer-readable medium claims would not change if the word "means" were substituted for the preamble. *Id*. According to Defendant, claims 22–24 fail to recite sufficiently definite structure to avoid the application of § 112, ¶ 6. *Id*.

Defendant further argues that because claims 21–24 contain multiple means-plus-function terms, the specification must disclose an algorithm that accomplishes the claimed functions to avoid indefiniteness. *Id*. at 23. Defendant contends that the specification fails to disclose an algorithm that performs the claimed function of extracting one or more motion vectors from a video stream. *Id*. (citing Dkt. No. 147-1 at ¶ 28). Defendant also contends that the specification fails to disclose an algorithm for assigning an importance to the extracted motion vectors. *Id*. (citing Dkt. No. 147-1 at ¶ 34). Defendant further contends that the specification fails to disclose an algorithm for the function of partitioning a video stream into a plurality of data types based on an importance assigned to extracted motion vectors. *Id*. (citing Dkt. No. 147-1 at ¶ 42). Defendant also argues that the specification fails to disclose an algorithm for adding error protection to a video stream based on an importance assigned to the extracted motion vectors. *Id*. (citing Dkt. No. 147-1 at ¶ 49).

Plaintiff replies that Defendant has failed to overcome the presumption that the claim preambles reciting "[a] computer-readable medium" are not governed by pre-AIA 35 U.S.C. § 112, ¶ 6. Dkt. No. 150 at 9. Plaintiff contends that Defendant ignores findings of the U.S. Patent Office that the phrase "computer readable medium" has a structural meaning that is patentably distinct from the phrase "means for." *Id*. at 10. Plaintiff also argues that Defendant fails to address that there is no requirement that a claim preamble recite a known structural element. *Id*. Finally, Plaintiff argues that the declaration Defendant filed is conclusory and unavailing. *Id*.

2. Analysis

Claims 22, 23, and 24 are computer-readable medium (or *Beauregard*) claims. A *Beauregard* claim—named after *In re Beauregard*, 53 F.3d 1583 (Fed. Cir. 1995)—is a claim to a computer readable medium (e.g., a disk, hard drive, or other data storage device) containing

program instructions for a computer to perform a particular process." *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1373 (Fed. Cir. 2011). The Federal Circuit has instructed that *Beauregard* claims should be treated as method claims. *See Digital-Vending Servs. Int'l, LLC v. Univ. of Phoenix, Inc.*, 672 F.3d 1270, 1276 n.1 (Fed. Cir. 2012) (stating that *Beauregard* claims "should be treated as method claims to avoid 'exalt[ing] form over substance'" (quoting *CyberSource*, 654 F.3d at 1374)).

Defendant argues that determining whether § 112, ¶ 6 governs particular computer-readable medium claims "involves a number of factual inquiries into the specifics of each case." Dkt. No. 147 at 21 (citing *Blitzsafe Texas, LLC v. Subaru Corp.*, Case No. 2:17-cv-00421-JRG-RSP, 2018 WL 6504174, at *20 (E.D. Tex. Dec. 11, 2018)). The Court finds that the computer-readable medium claims in the '450 Patent are not subject to § 112, ¶ 6. Here, there is a rebuttable presumption that § 112, ¶ 6 does not apply because the claims do not recite the word "means." Therefore, the analysis proceeds in two steps.

Starting with the first step, Defendant argues that the phrase "computer-readable medium" does not indicate any structure because computers at the time of the invention were capable of reading almost any form of medium. Dkt. No. 147 at 22. Defendant further argues that the phrase "computer executable process steps" also fails to indicate any structure. *Id.* According to Defendant, the specification must set forth an adequate disclosure of the structure that corresponds to each of the claimed functions to avoid indefiniteness. *Id.* at 23.

The Court finds that Defendant has conflated the steps in the § 112, ¶ 6 analysis. *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1298–99 (Fed. Cir. 2014) ("Requiring traditional physical structure in software limitations lacking the term means would result in all of these limitations being construed as means-plus-function limitations and subsequently being found indefinite.");

Zeroclick, LLC v. Apple Inc., 891 F.3d 1003, 1007–09 (Fed. Cir. 2018) (holding that the district court erred by effectively treating "program" and "user interface code" as nonce words and concluding in turn that the claims recited means-plus-function limitations).

Here, the term "computer-readable medium," like "detector" in *Personalized Media*, 161 F.3d at 704–07, and "circuit" in *Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1319–21 (Fed. Cir. 2004), connotes sufficiently definite structure to avoid invoking § 112, ¶ 6. The phrase "computer-readable medium" is introduced in the respective claim preamble (of claims 22–24) and further structurally defined by the following requirements:". . . having stored thereon, computer executable process steps operative to control computer to document source files, the steps comprising: . . . ."

Moreover, in contrast to the claims in *Williamson*, claims 22, 23, and 24 themselves recite the objectives and operations of the "computer-readable medium" limitations. In other words, the claim language provides a description of how the computer-readable medium is specifically programmed to operate. For example, the claims recite the following:

- extracting one or more vectors from the multimedia stream (claim 22);
- analyzing the one or more extracted motion vectors (claim 22);
- partitioning the multimedia stream into a plurality of data types based at least in part on the analysis of the extracted motion vectors (claim 22);
- adding a plurality of error protection units to the multimedia stream based on the analysis of the extracted motion vectors (claim 22);
- assigning an importance to the motion vectors (claim 23);
- extracting one or more vectors from the video stream (claim 23);
- partitioning the video stream into a plurality of data types (claim 23);

- adding a plurality of error protection units to the partitioned video stream (claim 23);
- extracting one or more vectors from the video stream (claim 24);
- partitioning the video stream (claim 24); and
- adding a plurality of error protection units to the video stream (claim 24).

'450 Patent at 6:40–7:12; *see also Linear Tech.*, 379 F.3d at 1320 (holding that the objectives and outputs of the "circuit for monitoring a signal from the output terminal to generate a first feedback signal" limitation are "monitoring a signal from the output terminal" and "generating a first feedback signal"). Thus, a person of ordinary skill in the art would understand that the claim language recites sufficient structure and that the term "computer-readable medium" is not used as a generic term or black box recitation of structure or abstractions. *Zeroclick*, 891 F.3d at 1007–09 ("[A] person of ordinary skill in the art could reasonably discern *from the claim language* that the words '*program*,' . . . and '*user interface code*,' . . . are used not as generic terms or black box recitations of structure or abstractions, but rather as specific references to conventional graphical user interface programs or code, existing in prior art at the time of the inventions.") (emphasis added).

It is true that when a limitation is a means-plus-function limitation and the corresponding structure is software, there must be an algorithm for the software or else the means-plus-function limitation will be considered indefinite unless the function can be performed by a general-purpose computer. *See Function Media, LLC v. Google, Inc.*, 708 F.3d 1310, 1318 (Fed. Cir. 2013) (holding that the corresponding disclosure for a computer-implemented means-plus-function claim is an algorithm). But that authority is not on point because that definiteness analysis is triggered only where the limitation is a means-plus-function limitation.

In summary, although the presumption against § 112 ¶ 6 is no longer "strong," it is still a presumption that Defendant must affirmatively overcome. In the context of the intrinsic record for the '450 Patent, the Court finds that Defendant has not shown that the "computer-readable medium" claims should be subject to § 112, ¶ 6. Accordingly, the Court rejects Defendant's argument the "computer-readable medium" claims should be governed by § 112, ¶ 6 and finds that no further construction is required. Finally, in reaching its conclusion, the Court has considered the extrinsic evidence submitted by the parties and given it its proper weight in light of the intrinsic evidence.

3. Court's Construction

For the reasons set forth above, Claims 22, 23, and 24 are **not governed by 35 U.S.C. § 112, ¶ 6** and will be given their **plain and ordinary meaning**.

F. Claim 21

Disputed Term	**Plaintiff's Proposal**	**Defendant's Proposal**
"a motion-vector extractor for [extracting] one or more motion vectors from a video stream" (Claim 21)	Not governed by 35 U.S.C. § 112(6); not indefinite; no construction necessary	Governed by 35 U.S.C. § 112(6) Indefinite due to absence of corresponding structure (algorithm) in the specification under 35 U.S.C. § 112(2), 112(6). **Function:** "extracting one or more motion vectors from a video stream" **Structure/Algorithm:** None

Disputed Term	**Plaintiff's Proposal**	**Defendant's Proposal**
"an analysis software tool for assigning the importance to each of the motion vectors, controlling the error-protection controller to add error protection based on the assigned importance, and controlling the video stream partitioner for partitioning the video stream based on the assigned importance" (Claim 21)	Not governed by 35 U.S.C. § 112(6); not indefinite; no construction necessary	Governed by 35 U.S.C. § 112(6) Indefinite due to absence of corresponding structure (algorithm) in the specification under 35 U.S.C. § 112(2), 112(6). **Functions:** "assigning the importance to each of the motion vectors, controlling the error protection controller to add error protection based on the assigned importance, and controlling the video stream partitioner for partitioning the video stream based on the assigned importance" **Structure/Algorithm:** None
"a video stream partitioner for partitioning the video stream based on an assigned importance to the extracted one or more motion vectors" (Claim 21)	Not governed by 35 U.S.C. § 112(6); not indefinite; no construction necessary	Governed by 35 U.S.C. § 112(6) Indefinite due to absence of corresponding structure (algorithm) in the specification under 35 U.S.C. § 112(2), 112(6). **Function:** "partitioning the video stream based on an assigned importance to the extracted motion vectors" **Structure/Algorithm:** None
"an error-protection controller for adding error protection to the video stream based on an assigned importance to the extracted one or more motion vectors" (Claim 21)	Not governed by 35 U.S.C. § 112(6); not indefinite; no construction necessary	Governed by 35 U.S.C. § 112(6) Indefinite due to absence of corresponding structure (algorithm) in the specification under 35 U.S.C. § 112(2), 112(6). **Function:** "adding error protection to a video stream based on an assigned importance to the extracted motion vectors" **Structure/Algorithm:** None

Shortly before the start of the January 6, 2020 hearing, the Court provided the parties with

the following preliminary constructions for these phrases: Not governed by 35 U.S.C. § 112, ¶ 6, Plain and ordinary meaning.

1. The Parties' Positions

The parties dispute whether the terms "motion-vector extractor," "analysis software tool," "video stream partitioner," and "error-protection controller" should be governed by 35 U.S.C. § 112, ¶ 6. Dkt. No. 139 at 15. Plaintiff argues that there is a presumption that § 112, ¶ 6 does not apply to any of these disputed terms. *Id*. Plaintiff contends that Defendant has not provided evidence sufficient to meet its burden of overcoming that presumption. *Id*. Plaintiff also argues that the presumption is strengthened because each of the challenged elements recite certain limiting qualifiers modifying a term that has a reasonably well understood meaning in the art. *Id*.

Specifically, Plaintiff contends that the name "analysis software tool" itself connotes sufficient structure and that the claim structurally defines its interrelation with other claimed elements. *Id*. at 16 (citing '450 Patent at 1:54–59). For the term "an error-protection controller," Plaintiff argues that the word "controller" had an understood meaning by persons of ordinary skill in the art and that the claim structurally defines its interrelation with other claimed elements. *Id*. at 17.

For the term "a video stream partitioner," Plaintiff argues that the specification uses the word "partition" in a manner that reveals it is a reasonably well understood term of art and that the claim structurally defines its interrelation with other claimed elements. *Id*. at 17–18 (citing '450 Patent at 1:43–44, 1:57–59, 1:64–2:3). For the term "a motion-vector extractor," Plaintiff argues that the specification describes a motion vector extractor 110 operating as a "bitstream parser." *Id*. at 18 (citing '450 Patent at 2:65–3:6).

Defendant responds that the first three terms begin with nonce phrases that simply restate the function to be performed and do not connote any structure to a person of ordinary skill in the

art. Dkt. No. 147 at 19 (citing Dkt. No. 147-1 at ¶¶ 26, 40, 47). Defendant further argues that the phrase "analysis software tool" does not connote any structure to a person of ordinary skill in the art. *Id*. (citing Dkt. No. 147-1 at ¶ 54). Regarding the term "motion-vector extractor," Defendant contends that Plaintiff does not point to claim language that provides the requisite structure and fails to explain how a "bitstream parser" can provide sufficiently definite structure. *Id*. at 20.

Regarding the term "video stream partitioner," Defendant argues that the function recited in the claim does not structurally define video stream partitioner. *Id*. (citing Dkt. No. 147-1 at ¶ 40). Defendant further argues that the use of similar terms in a functional context (e.g., "MPEG partitions video") provides no indication whether a person of ordinary skill in the art would have understood "partitioner" in claim 21 to provide sufficiently definite structure. *Id*. at 21 (citing Dkt. No. 147-1 at ¶ 40).

Regarding the term "error-protection controller," Defendant argues that the dictionary definition provided by Plaintiff relates solely to the word "controller and never addresses error protection." *Id*. Regarding the term "analysis software tool," Defendant contends that its previous arguments addressing claims 22–24 explain why such language does not recite sufficiently definite structure for performing the claimed functions. *Id*. at 21.

Plaintiff replies that Defendant has failed to overcome the presumption that the challenged elements of claim 21 are not governed by § 112, ¶ 6. Dkt. No. 150 at 10. Plaintiff argues that it has cited to intrinsic evidence that the elements of claim 21 are used by persons of skill in the art to designate structure. *Id*. Plaintiff also argues that it quoted definitions from Oxford University's Dictionary of Computing as rebuttal evidence that corresponding claim terms are names for structure. *Id*.

2. Analysis

There is a rebuttable presumption that § 112, ¶ 6 does not apply because claim 21 does not recite the word "means." Therefore, the analysis proceeds in two steps. As with the computer-readable media claims, Defendant has conflated the steps in the § 112, ¶ 6 analysis. *Apple Inc. v. Motorola, Inc.*, 757 F.3d at 1298–99 ("Requiring traditional physical structure in software limitations lacking the term means would result in all of these limitations being construed as means-plus-function limitations and subsequently being found indefinite."); *Zeroclick,* 891 F.3d at 1007–09 (holding that the district court erred by effectively treating "program" and "user interface code" as nonce words and concluding in turn that the claims recited means-plus-function limitations.).

Here, the terms "motion-vector extractor," "analysis software tool," "video stream partitioner," and "error-protection controller," like "detector" in *Personalized Media*, 161 F.3d at 704–07, and "circuit" in *Linear Tech.*, 379 F.3d at 1319–21, connote sufficiently definite structure to avoid invoking § 112, ¶ 6. Specifically, the Oxford University's Dictionary of Computing defines "software tool" to mean "[a] program that is employed in the development, repair, or enhancement of other programs or of hardware." Dkt. No. 147-2 at 6 (*Dictionary of Computing* at p. 462 (Oxford University Press, 4th ed. 1997)).

Consistent with this definition, the background section of the specification refers to the word "tool" as a term of art used to refer to certain special-purpose software. *See, e.g.*, '450 Patent at 1:54–59 ("To make the compressed video stream more robust to errors that arise during transmission, several error correction tools to enable detection, containment, and concealment of errors are used. Such tools include resynchronization makers, header extension codes, data partitioning, and variable length coding."). Accordingly, the term "analysis software tool"

connotes sufficient structure to avoid § 112, ¶ 6.

Similarly, the Oxford University's Dictionary of Computing defines "controller" as follows:

> A subsystem that governs the functions of attached devices but generally does not change the meaning of the data that may pass through it. The attached devices are usually peripherals or communication channels. One of the functions of the controller may involve processing the data stream in order to format it for transmission or recording.

Dkt. No. 147-2 at 5 (*Dictionary of Computing* at p. 106 (Oxford University Press, 4th ed. 1997)). Accordingly, the term "error-protection controller" connotes sufficient structure to avoid § 112, ¶ 6.

Likewise, the background section of the '450 Patent uses the word "partition," in a manner that reveals this word is a reasonably well understood term of art. *See, e.g.*, '450 Patent at 1:43–44 ("MPEG *partitions* video into I, P or B frames (Intra, Predicted, or Bidirectional frames).") (emphasis added); 1:57–59 ("Such tools include resynchronization makers, header extension codes, *data partitioning*, and variable length coding.") (emphasis added); 1:64–2:3 ("However, since the strength of the error protection is based solely on the data *partition* type, these error protection methods ignore the data actually contained in the data streams.") (emphasis added). It follows that the element introduced as "a video stream partitioner" connotes structure at least through its use of well-understood modifier "video stream" to modify "partitioner." The specification also confirms that the term introduced as "a motion-vector extractor" connotes structure. For example, the specification describes a preferred embodiment of the motion vector extractor 110 operating as a "bitstream parser." '450 Patent at 2:65–3:6.

Moreover, in contrast to the claims in *Williamson*, claim 21 itself recites the objectives and operations of the "motion-vector extractor," "analysis software tool," "video stream partitioner," and "error-protection controller" limitations. For example, claim 21 recites the following:

- [extracting] one or more motion vectors from a video stream;
- partitioning the video stream based on an assigned importance to the extracted one or more motion vectors;
- adding error protection to the video stream based on an assigned importance to the extracted one or more motion vectors; and
- assigning the importance to each of the motion vectors, controlling the error-protection controller to add error protection based on the assigned importance, and controlling the video stream partitioner for partitioning the video stream based on the a signed importance.

'450 Patent at 6:24–39; *see also Linear Tech*., 379 F.3d at 1320 (holding that the objectives and outputs of the "circuit for monitoring a signal from the output terminal to generate a first feedback signal" limitation are "monitoring a signal from the output terminal" and "generating a first feedback signal"). Thus, a person of ordinary skill in the art would understand that the "motion-vector extractor," "analysis software tool," "video stream partitioner," and "error-protection controller" limitations recite sufficient structure and that the limitations are not used as generic terms or black box recitations of structure or abstractions. *Zeroclick,* 891 F.3d at 1007–09 ("a person of ordinary skill in the art could reasonably discern *from the claim language* that the words '*program,*' . . . and '*user interface code,*' . . . are used not as generic terms or black box recitations of structure or abstractions, but rather as specific references to conventional graphical user interface programs or code, existing in prior art at the time of the inventions.") (emphasis added).

In addition, claim 21 further structurally defines the "analysis software tool" in terms of both the specific analysis it performs and its interrelation with other claimed elements (e.g., "assigning the importance to each of the motion vectors, controlling the error protection controller

to add error protection based on the assigned importance, and controlling the video stream partitioner for partitioning the video stream based on the assigned importance"). Claim 21 also structurally interrelates the "an error-protection controller" with the "software analysis tool" by reciting that the latter "control[s] the error protection controller to add error protection based on the assigned importance."

The remainder of claim 21 also structurally interrelates the "video stream partitioner" with the "software analysis tool" by reciting that the latter "control[[s] the video stream partitioner for partitioning the video stream based on the assigned importance." Thus, the claims recite how the claimed components "interact[] with other components . . . in a way that . . . inform[s] the structural character of the limitation-in-question or otherwise impart[s] structure." *E2E Processing, Inc. v. Cabela's Inc.*, No. 2:14-CV-36-JRG-RSP, 2015 U.S. Dist. LEXIS 86060, at *20 (E.D. Tex. July 2, 2015) (quoting *Williamson*, 792 F. 3d at 1351).

It is true that when a limitation is a means-plus-function limitation, and the corresponding structure is software, there must be an algorithm for the software or else the means-plus-function limitation will be considered indefinite unless the function can be performed by a general purpose computer. *See Function Media*, 708 F.3d at 1318 (holding that the corresponding disclosure for a computer-implemented means-plus-function claim is an algorithm). But that authority is not on point because that definiteness analysis is triggered only where the limitation is a means-plus-function limitation.

In summary, although the presumption against § 112, ¶ 6 is no longer "strong," it is still a presumption that Defendant must affirmatively overcome. In the context of the intrinsic record for the '450 Patent, the Court finds that Defendant has not shown that claim 21 should be subject to § 112, ¶ 6. Accordingly, the Court rejects Defendant's argument that the terms "motion-vector

extractor," "analysis software tool," "video stream partitioner," and "error-protection controller" claims should be governed by § 112, ¶ 6 and finds that no further construction is required. Finally, in reaching its conclusion, the Court has considered the extrinsic evidence submitted by the parties and given it its proper weight in light of the intrinsic evidence.

3. Court's Construction

For the reasons set forth above, Claim 21 of the '450 Patent is **not governed by 35 U.S.C. § 112, ¶ 6**, and will be given its **plain and ordinary meaning**.

V. CONCLUSION

The Court adopts the constructions set forth in this opinion for the disputed terms of the patents-in-suit. The parties are ordered to not refer to each other's claim construction positions in the presence of the jury. Likewise, in the presence of the jury, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual definitions adopted by the Court. The Court's reasoning in this order binds the testimony of any witnesses, and any reference to the claim construction proceedings is limited to informing the jury of the definitions adopted by the Court.

SIGNED this 5th day of February, 2020.

ROY S. PAYNE
UNITED STATES MAGISTRATE JUDGE